VIDEO OUTPUT PENTODE

Luminance output tube in colour TV receivers.

QUICK REFERENCE DATA				
Anode current	I_a		30	mA
Transconductance	S		40	mA/V
Anode dissipation	W_a	max.	6	W

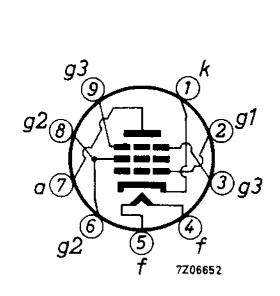
HEATING: Indirect by A.C. or D.C.; series supply

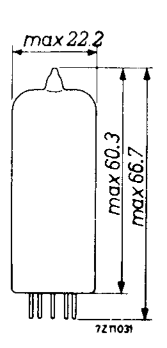
Heater current	I_f	300	mA
Heater voltage	V_f	16	V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval





CAPACITANCES

Anode to all except grid No.1	$C_{a(g_1)}$		4	pF
Grid No.1 to all except anode	$C_{g_1(a)}$		20	pF
Anode to grid No.1	C_{ag_1}		0.075	pF
Anode to grid No.1	C_{ag_1}	max.	0.1	pF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	170	V
Grid No.2 voltage	V_{g_2}	170	V
Grid No.3 voltage	V_{g_3}	0	V
Grid No.1 supply voltage	V_{bg_1}	0	V
Cathode resistor (decoupled)	R_k	36	Ω
Anode current	I_a	30	mA
Grid No.2 current	I_{g_2}	6.5	mA
Transconductance	S	40	mA/V
Amplification factor	$\mu_{g_2g_1}$	70	-

LIMITING VALUES (Design centre rating system unless otherwise stated)

Anode supply voltage	V_{b_a}	max.	400	V
Anode voltage,	V_{a_o}	max.	550	V
long term average	Va	max.	300	V
Grid No.2 voltage	$V_{g_{2o}}$	max.	550	V
	V_{g_2}	max.	300	V
Anode dissipation	W_a	max.	6	W
Grid No.2 dissipation	W_{g_2}	max.	2.5	W
	W_{g_2}	max.	3.0	W 1)
Cathode current	I_k	max.	100	mA
Grid No.1 resistor	R_{g_1}	max.	0.1	MΩ
at $R_k \geq 39$ Ω	R_{g_1}	max.	0.5	MΩ
Cathode to heater voltage	V_{kf}	max.	200	V

1) Design maximum rating system including no signal condition.

OPERATING CONDITIONS (negative modulation)

V_b	=	250	V
R_b	=	330	Ω
R_{av}	=	560	Ω
R_a	=	2.7	kΩ
R_{g_2}	=	5.6	kΩ
R_k [1])	=	39	Ω
$+V_{bg_1}$	=	4	V

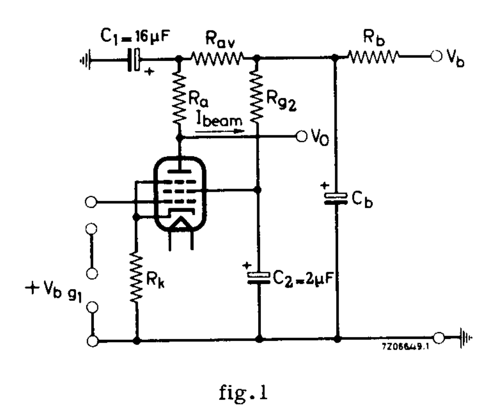


fig.1

V_{o_1}	=	100	V
V_{opp}	≧	140	V
Video-linearity	≧	0.8	–
V_{ipp}	ca.	5	V
I_{beam}	max.	7	mA

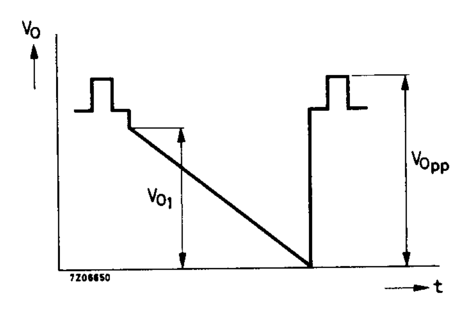
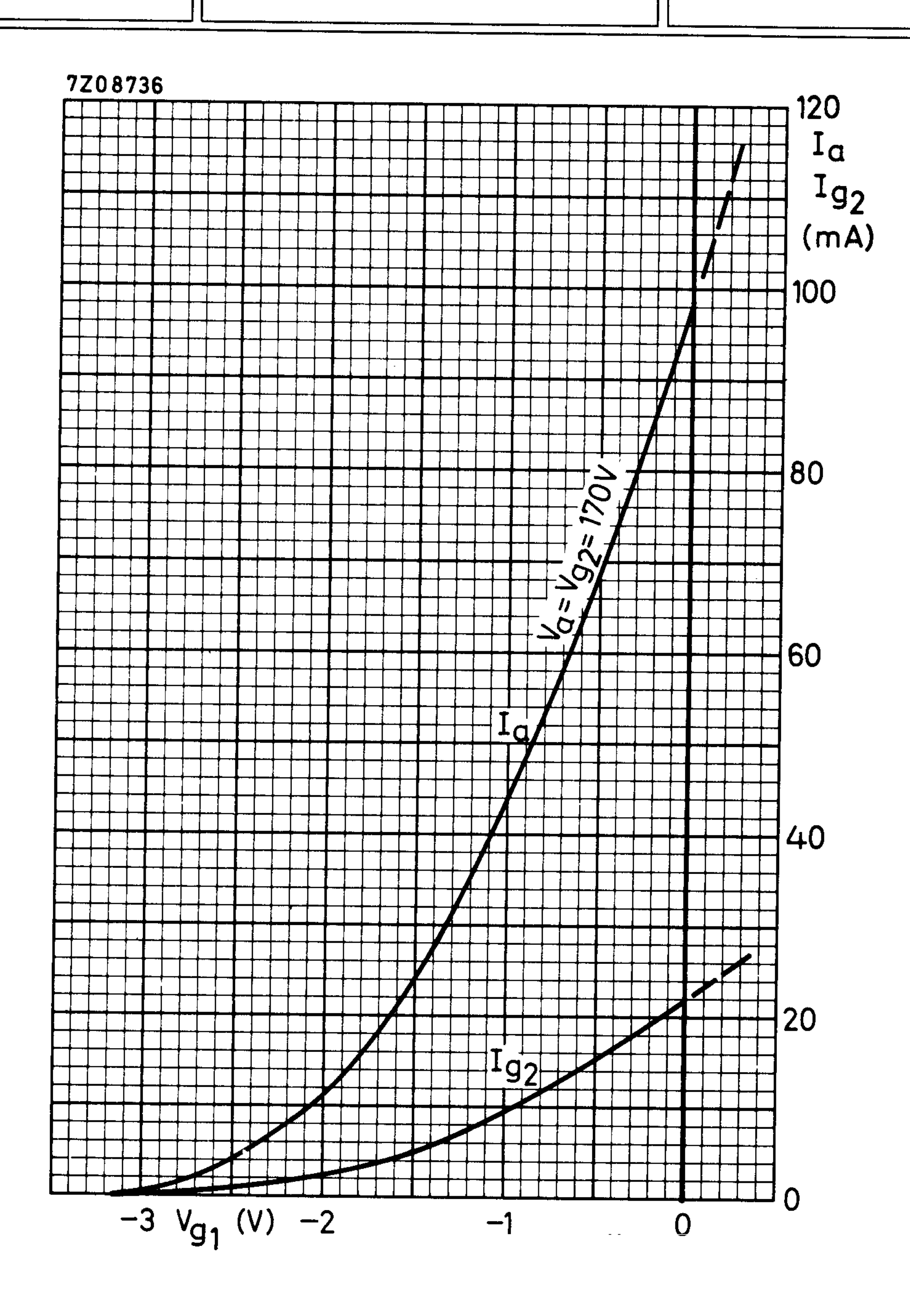


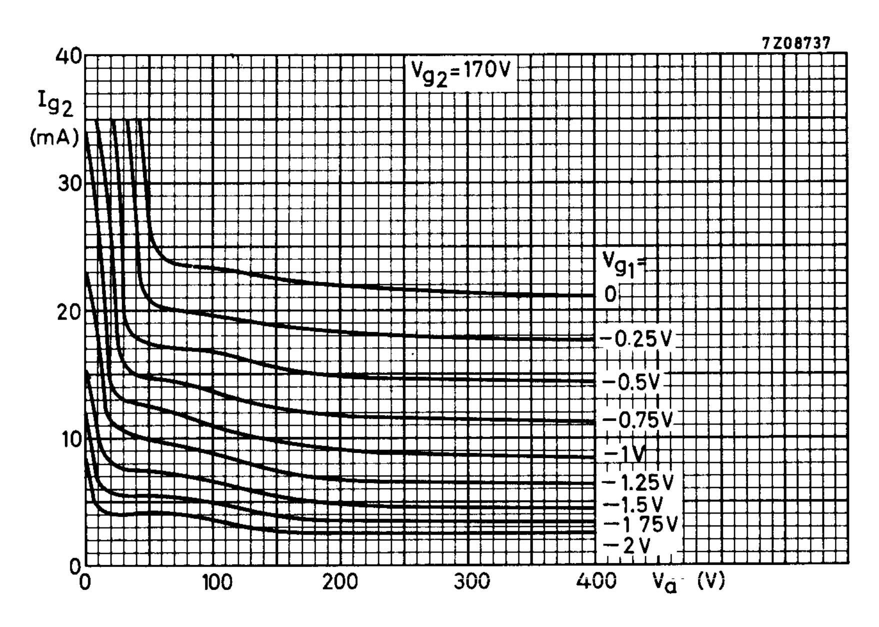
fig.2

1) Without by-pass capacitor.


7Z08736
120
I_a
I_{g_2}
(mA)
100
80
60
40
20
0
$V_a = V_{g_2} = 170V$
I_a
I_{g_2}
−3
V_{g_1} (V)
−2
−1
0

7Z08738

150
I_a (mA)
100
50
0
$W_a = 6W$
$V_{g2} = 170V$
$V_{g1} =$
0, $I_{g1} = 10\mu A$
−0.25V
−0.5V
−0.75V
−1V
−1.25V
−1.5V
−1.75V
−2V
0
100
200
300
V_a (V)
400





PL802

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